Combined Cycle Mode Transition

Active Technology Project (2016 - 2023)

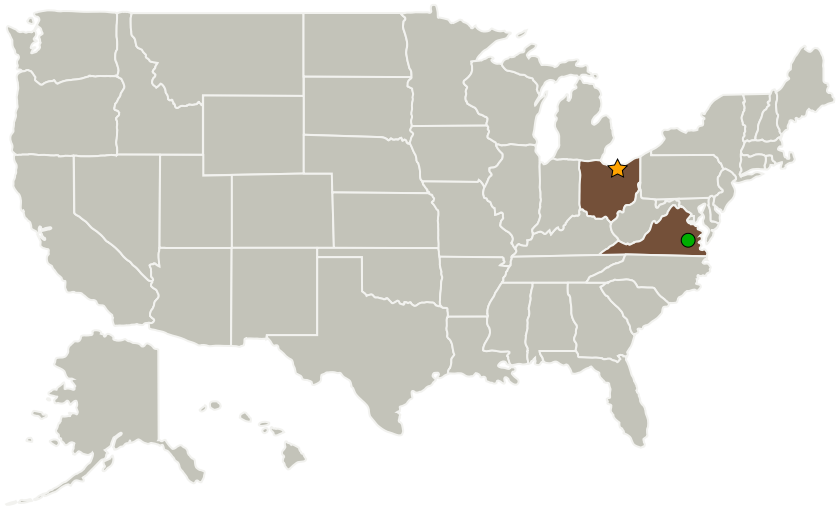
Project Introduction

The Combined Cycle Mode Transition challenge demonstrates autonomous control and establishes performance/operability assessment methodologies for future reusable hypersonic propulsion systems that use turbine engines at slow speeds while transitioning to scramjets for high-speed operations. This challenge addresses the technology barrier of propulsion system mode transition via ground tests.

Anticipated Benefits

Supports the demonstration of critical enabling technologies for hypersonic vehicles and space access platforms with a live turbine engine and simulated high-speed propulsion system.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Glenn Research Center(GRC)	Lead Organization	NASA Center	Cleveland, Ohio
●Langley Research Center(LaRC)	Supporting Organization	NASA Center	Hampton, Virginia

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Organizational Responsibility

Responsible Mission Directorate:

Aeronautics Research Mission Directorate (ARMD)

Lead Center / Facility:

Glenn Research Center (GRC)

Responsible Program:

Advanced Air Vehicles

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Primary U.S. Work Locations	
Ohio	Virginia

Project Website:

https://www.nasa.gov/aeroresearch/programs/aavp/ht

Project Management

Program Director:

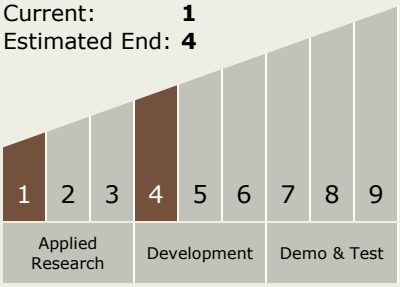
James A Kenyon

Project Manager:

Charles P Leonard

Technology Maturity (TRL)

Start: **1**
Current: **1**
Estimated End: **4**



Technology Areas

Primary:

- TX01 Propulsion Systems
  - TX01.3 Aero Propulsion
    - TX01.3.2 Turbine Based Combined Cycle

Target Destination

Earth